

Utilization of Hospital Emergency Departments, Rhode Island 2005

Karen A. Williams, MPH and
Jay S. Buechner, PhD

Recent changes to licensure regulations in Rhode Island required hospitals to report emergency department (ED) visit and observation data to the Department of Health routinely beginning in 2005. ED data in particular provide a wealth of information on special populations (e.g., the uninsured) and conditions seen primarily in the outpatient setting. Preliminary data on ED utilization are presented here, with special focus on the disparities between the insured and uninsured populations.

Methods. Under licensure regulations, the eleven -acute-care general hospitals and two psychiatric facilities in Rhode Island report to the Department of Health a defined set of data items on each emergency department visit beginning with visits occurring January 1, 2005. The data reported includes patient-level demographic and clinical information. This analysis covers ED visits occurring January 1 - December 31, 2005, and is limited to ED visits not resulting in admission to the hospital. ED data reported by the two psychiatric hospitals consist of visit data for patients receiving an unscheduled psychiatric evaluation that did not result in an inpatient stay. Due to complexities in the manner in which hospitals record ED data, the data presented here are subject to change as methods to distinguish ED visits that result in inpatient admission at acute-care facilities from those that do not are improved. Diagnoses are coded in ICD-9-CM,¹ and were grouped as for published national data.² Expected source of payment reported as “self-pay” was used as a proxy for uninsured in this analysis. Comparative data for inpatient stays were produced by analyzing the data on inpatient discharges also reported by the state’s acute-care hospitals.

Results. In 2005, there were 382,243 ED visits not resulting in an inpatient stay to Rhode Island’s acute-care general and psychiatric hospitals. Of these, the highest proportion of visits was to Rhode Island Hospital (26.1%), followed by Kent County Memorial Hospital (12.3%). (Table 1) The two psychiatric hospitals reported the lowest volume, together comprising less than one percent.

Females accounted for more than one-half (55.4%) of all ED visits and for the majority of visits within each age group

Table 1.
Number of Emergency Department Visits by Hospital,
Rhode Island 2005

Hospital	Number of ED Visits	Percent of Total
Rhode Island	99,741	26.1%
Kent County	47,060	12.3%
Landmark	41,191	10.8%
Miriam	30,576	8.0%
South County	27,674	7.2%
Newport	25,937	6.8%
Saint Joseph	25,086	6.6%
Westerly	22,616	5.9%
Memorial	22,254	5.8%
Women and Infants	21,981	5.8%
Roger Williams	16,193	4.2%
Butler	1,847	0.5%
Bradley	87	0.0%
Total	382,243	100.0%

except 0-14 years, where males comprised 54.1% of the visits. For both males and females, approximately one-half of the visits were among those ages 15-44, a younger pattern than the inpatient population, where 41.1% of admissions are of persons ages 65 years and older.

Nearly 40% of ED visits were covered by private insurance (including CHAMPUS), with Blue Cross comprising the largest proportion overall. (Figure 1) Medicaid managed care, primarily Rite Care, was the second leading payer, with

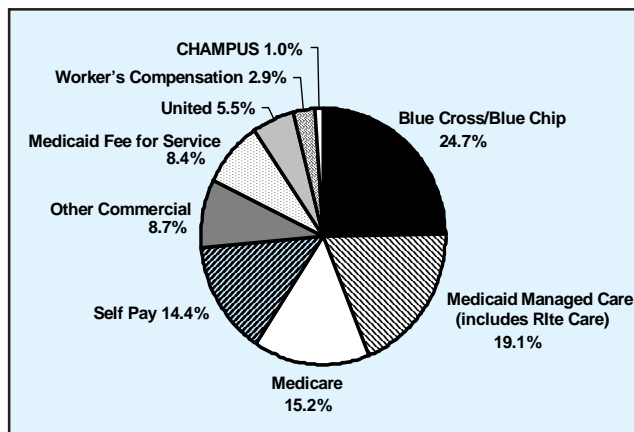


Figure 1. Percent distribution of emergency department visits by expected source of payment, Rhode Island, 2005

— Health by Numbers —

19.1% of visits. Expected source of payment among ED visits was distributed differently than among hospital inpatients. For example, Medicare, which accounts for the largest proportion of inpatient admissions (45.4% in 2004), accounted for only 15.2% of ED visits. Additionally, 14.4% of ED visits were uninsured, compared to only 3.1% of all inpatient stays and 4.9% of inpatients admitted through the emergency department.

Insurance status varied by age group and sex. ED visits for those ages 15-44 accounted for the greatest proportion of visits by far, with 48.3% of ED visits among the insured and over three-fourths (76.1%) of the uninsured visits. For both males and females, the youngest (ages 0-14) and oldest (ages 65+) age groups had the

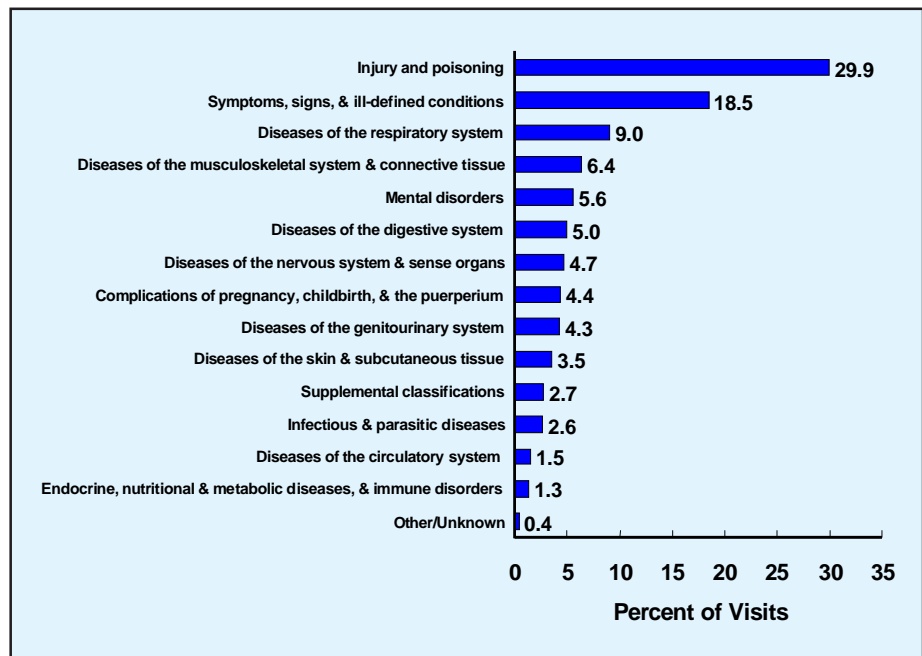


Figure 3. Percentage distribution of emergency department visits by first-listed diagnosis category, Rhode Island, 2005

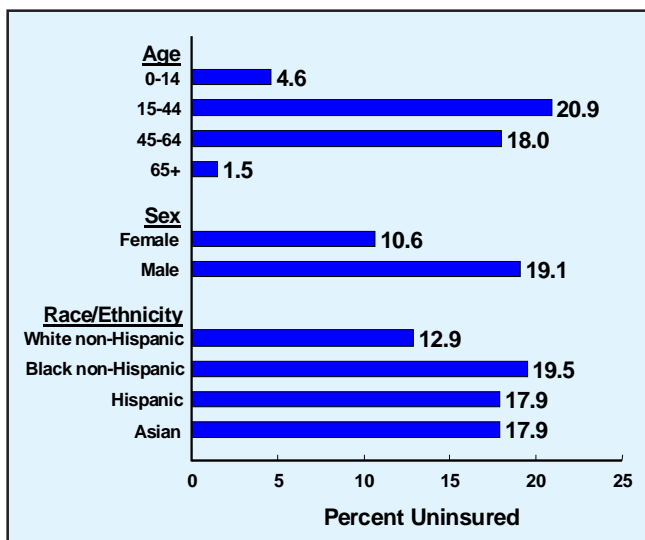


Figure 2. Percent of emergency department visits not covered by insurance, by age group, sex and selected race/ethnicity groups, Rhode Island, 2005

lowest proportion of uninsured visits. (Figure 2) The difference in insurance status by sex is greatest for those ages 15-44. Overall, one in five visits in this age group are uninsured, but 30.1% of males are uninsured compared to 14.4% of females. Overall, nineteen percent of visits by males were uninsured, compared to only 10.6% of visits by females. (Figure 2)

Among ED visits, insurance status also varied by race and ethnicity. Seventy-four percent of ED visits were by White Non-Hispanic persons. The next largest race/ethnic group was Black Non-Hispanic, accounting for 9.1% of all ED visits.

Persons identified as White non-Hispanic had the lowest proportion of visits without insurance (12.9%). (Figure 2) The proportion without insurance was much higher for minority groups – 19.5% for Black non-Hispanic, 17.9% for Hispanic, and 17.9% for Asian.

Injury and poisoning was the leading first-listed diagnosis category overall and for both the insured and uninsured, comprising almost a third (29.9%) of all ED visits. (Figure 3) The second leading diagnosis category was symptoms, signs, and ill-defined conditions, which accounted for 18.5% of all visits, followed by diseases of the respiratory system (9.0%). The most notable differences by insurance status were for mental disorders and for complications of pregnancy, childbirth and the puerperium. Mental disorders was the third leading category among the uninsured ED visits (9.9%), but ranked only seventh for those insured (4.8%). Complications of pregnancy, childbirth, and the puerperium accounted for 4.9% of insured ED visits, but only 1.4% of uninsured visits.

Discussion. Emergency department data is a rich data source useful for examining trends among the uninsured and disease conditions specific to outpatient settings. Utilization patterns in the ED differ from patterns seen for inpatients with regards to patient characteristics, health insurance and disease conditions.

Significant proportions of ED visits by both genders are uninsured. Not surprisingly, lack of insurance is highest for males ages 15-44, where the uninsured represent almost one-third of visits. This disparity in insurance status by age and sex highlights the need for improving insurance coverage among this group.

— Health by Numbers —

Few differences in disease conditions between the insured and uninsured populations were identified based on broad diagnosis categories. However, the proportion of persons seeking care in hospital EDs who are uninsured is much higher than the proportion uninsured among inpatients, including those admitted through the ED, giving rise to the question of whether the uninsured may be using the ED largely for non-emergent conditions. More detailed analyses of the diagnostic information in the ED database are planned to investigate the use of emergency departments for such conditions, with particular regards to insurance status. In the longer term, linking ED data to aggregate population-based survey data on access to primary care and usual sources of care will be pursued, with the expectation that the additional information may help to explain the utilization patterns identified from the ED database.

Karen A. Williams, MPH, is Public Health Epidemiologist, Center for Health Data and Analysis.

Jay S. Buechner, PhD, is Chief, Center for Health Data and Analysis, and Assistant Professor of Community Health, Brown Medical School.

References

1. Public Health Service and Health Care Financing Administration. *International Classification of Diseases, 9th Revision, Clinical Modification*, 6th ed. Washington: Public Health Service, 1996.
2. McCaig LF, Nawar EN. National Hospital Ambulatory Medical Care Survey: 2004 Emergency Department Summary. Advance Data from Vital and Health Statistics; No 372. Hyattsville, MD: National Center for Health Statistics.

Originally published in the December 2006 issue of Medicine & Health / Rhode Island

HEALTH

Rhode Island Department of Health
Center for Health Data & Analysis
3 Capitol Hill
Providence, RI 02908

*Change service requested
401 222-2550*

PRSR STD
U.S. Postage
PAID
Providence, R.I. 02904
Permit No. 1286